# Annual Report 2019/20

# Centre for Rural Technology, Nepal (CRT/N)

# Annual Report 2020



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Bhanimandal, Lalitpur
GPO Box: 3628, Kathmandu, Nepal.
Phone: 5547627/ 5530071
Email: info@crtnepal.org
Web: www.crtnepal.org
Blog: http://advocacy-wee-nepal.blogspot.com
Facebook: www.facebook.com/crtnepalorg

Cover Photo (Top): Women Entrepreneur Ms. Kamala Bhattarai, resident of Muglin Chitwan; Enterprise Vegetable and Poultry farming and cover photo (Bottom): Women Entrepreneurs from Devi Chaur, South Lalitpur in the process of making Lapsi Candey supported by ADB TA 9334-NEP.

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*"I had no money when I started beauty parlour, but my friends encouraged me and arranged some cash money for me to set up parlour. With the support of various trainings provided by TA 9334-NEP entitled 'Strengthening the Capacity of Nepal's Energy Sector to Deliver Gender Equality and Social Inclusion (GESI) Results project, I understand that nice presentation is more important to attract more customers. Furthermore, I understand the importance of investment in the business to get the expected profit."*

*Ms. Sarmila Gurung Tamang*

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# Message from the Chairperson

The whole world is in chaos this year due to the outbreak of Corona Virus, because of which the countries across the globe had announced lockdown and isolation. Nepal also could not stay untouched from this pandemic. In Nepal, the lockdown came into effect on 24 March 2020, and uplifted slightly on 14 June 2020. The pandemic disrupted the movements, meetings, seminars/workshops resulting in halt of most of the activities planned by CRT/N like all other development organizations in Nepal. However, we are trying our best to accomplish possible tasks with the support of our management, consortium partners and other stakeholders.

CRT/N has completed 31 years in serving local communities by developing and promoting rural appropriate technologies. It has been working in the area of Gender Equality and Social Inclusion (GESI) in the energy sector; Productive end-use – employment and income, Community water management; Climate change – adaptation and mitigation, advocacy in the sector of green energy.

CRT/N is working in 12 districts of Nepal through various projects. Since establishment, we have developed 2800 women entrepreneurs, carried advocacy and lobby activities from central level to local level on green and inclusive energy, implemented eco-village development projects provided awareness about renewable energy, climate change, and environment-friendly technologies to around 5,000,000 people, constructed and promoted more than 3,50,000 ICS (Mud and Metallic), built 9000 improved Water Mill IWM), 43 Improved Water Mill Electrification (IWME) and 30 hydraulic ramp pump in the past 31 years.

One of our big achievements is that many of the rural municipalities are now giving space to green energy programmes and eco-village development programmes & also promoting women economic empowerment activities in their policy and programmes. In addition to this, CRT/N is advocating for renewable energy at the school level, which has made possible the development of curriculum for class 1-5 in renewable energy, which is now being implemented in 28 schools of Mahankal Rural Municipality, South Lalitpur and being replicated in other Municipality areas.

On behalf of CRT/N Board of Directors, I am thankful to the Government of Nepal (Central, Provincial, and Local), our national, international development partners and communities for the continued support and cooperation. We look forward to delivering quality services to local communities for improving their livelihood.

Dr. Ananda Shova Tamrakar
Chairperson

# Foreword from Executive Director

It is our immense pleasure to present CRT/N's Annual Report of the programmes and activities undertaken during the year 2019/20 (2076/77 B.S). This report highlights CRT/N's programmes as well as technical and institutional services provided for the promotion of rural and renewable energy for improvement of livelihood of rural communities in Nepal. Since its establishment in 1989, CRT/N has been engaged in developing and promoting appropriate rural/ renewable energy technologies effective in meeting the basic needs and improving livelihood of rural communities. By realizing the importance of mainstreaming gender in the energy programmes, CRT/N has dedicated itself by integrating gender issues in its programmes since 2004. Over the years, the importance and addressing of gender issues has increased enhancing effectiveness of adopted various tools and mechanism to ensure that the core essence of gender in energy programmes remain crucial.

This year, CRT/N has successfully completed three major programmes: Improving Rural Livelihoods in Nepal with Pico-Hydro Electrification and Improved Water Mill (July 2018- September 2019), Hydraulic Ram Pump Technology in Bhutan (April-December 2019), Strengthening the Eco-Village Development (EVD) Concept: Affordable Local Climate Actions for Sustainable Development in South Asia (August 2019- July 2020). These programmes have prioritized in mass education and awareness, developing technical skills and institutional capabilities of the rural communities and stakeholders to support and ensure increased access to rural and renewable energy services including installation of improved water mills and Pico-hydro systems.

CRT/N, in collaboration with partner organizations, has continued to be actively engaged in the implementation of new programmes such as: Green and Inclusive Energy (GIE) Nepal Project from October 2016- December 2017 which has been extended up to August 2020, Eco-Village Development through Integration of Renewable Energy Solutions and Climate Friendly Activities for Enhancing Livelihood of Rural Communities in Bethanchwok Rural Municipality (January 2020- April 2021), Strengthening the Capacity of the Energy Sector to Deliver Gender Equality and Social Inclusion Results (TA 9334- NEP) (January 2019- June 2020), The emPOWER Collective Project- Phase II ( January 2020- December 2021), Solar Electrification of a Remote Village and Promoting Energy Planning Based on Reliable Data Collection in Nepal (July 2020- November 2021), Self-help Eco-Village Development Project (August 2019- February 2022).

These initiatives support the Government of Nepal's National Goal on "Clean Cooking Solutions for All", Sustainable Development Goals (SDGs), United Nation's Sustainable Energy for All (SE4ALL).

Finally, I would like to take this opportunity to express my sincere gratitude to all the Government organizations, sponsors, collaborators, partners and well-wishers for their continuous cooperation, support and encouragement especially to National Planning Commission, Ministry of Population and

Environment, Ministry of Energy, Water Resources and Irrigation, Alternative Energy Promotion Centre, Social Welfare Council, Nepal Electricity Authority, ENERGIA/ Hivos, GEF/SGP/UNDP, the World Bank, SNV/Nepal, EnDev/GIZ, CISU, DIB, INforSE, Clean Cooking Alliance, Asain Development Bank, Siemenpuu Foundation, University of Illinois, Bhutan Water partnership (BhWP), Royal Society for Protection of Nature (RSPN), Renewable World, Bhutan, NEFEJ, NACEUN, PAC, PA, RECoN, IAPHF, Agriculture Development Bank Ltd., Kathmandu University, Federal Government, Provincial Government, Urban and Rural Municipalities, National and Local Partner Organizations, Community Rural Electrification Entity (CREE) Local Communities and Community Based Organizations (CBOs), Civil Society Organizations (CSOs) and Private Sector Organizations.

My special thanks to the CRT/N's General Assembly and Governing Board for continued cooperation and support and sincere appreciation to all the staff members and consultants for their cooperation, hard work and dedication.

Mr. Ganesh Ram Shrestha
Executive Director

# Introduction to CRT/N

**Background**

Centre for Rural Technology, Nepal (CRT/N) is a professional non-governmental organization engaged in developing and promoting appropriate rural technologies effective in meeting the basic needs and improving livelihood of rural people. Established in August 1989 under the Company Act, CRT/N has been re-registered with Government of Nepal (GoN) under the Social Organization. Registration Act 2034 since October 1998. The organization is actively engaged in upgrading traditional technologies as well as developing new technologies with diversified and versatile applications to meet rural needs.

**Vision**

CRT/N as a professional / innovative organization and knowledge centre in renewable energy / appropriate technology delivering quality services to local communities for improving their livelihoods.

**Mission**

Develop, promote and disseminate environmentally sound rural / appropriate technologies and strengthen capability of rural communities in creating better opportunities through mobilization of local resources to improve their livelihood conditions.

**Objectives**

- Promote and disseminate rural/appropriate technologies to meet the basic needs of the people and improve their quality of life.
- Conduct adaptive and action-oriented research on indigenous and improved rural / appropriate technologies.
- Train and transfer technical information and know-how on production, installation and management of rural / appropriate technologies.
- Assist in development of technical and institutional capabilities for sustainable development.
- Provide technical support and consulting services in the field of rural energy and environment conservation and climate change.

**Area of Specialization**

Development and promotion of rural /appropriate and Renewable Energy Technologies (RETs):

- Household, commercial and institutional
- Improved Cookstoves (ICSs) (fixed type, prefabricated portable rocket stoves, metallic stoves);
- Briquette, pellet and charcoal;
- Improved Water Mill (IWM) with diversified end uses including electrification;
- Hydraulic ram pump;
- Solar cookers / dryers;
- Other appropriate and rural technologies

**CRTN's Priority Themes**

All the Programmes / Projects running under CRT/N are focused on the following priority themes:


- Total Access to Energy (through intervention of technologies; Improved Cook Stove (ICS), Improved Water Mill (IWM), and Hydraulic Ram Pumps (Hydram);
- Household Air Quality;
- Gender Equality and Social Inclusion (GESI) in Energy Sector ;
- Community Water Management ;
- Climate Change- Adaptation and Mitigation;
- Productive End Use- Employment and Income Generation

**Regional / International Activities**

CRT/N has been involved at the regional and international level activities through the following networks, extension of technical supports and services:

- International Network on Gender and Sustainable Energy (ENERGIA), the Netherlands: ENERGIA links individuals and groups concerned with energy, sustainable development and gender;
- Gender, Energy and Water Network (GEWNet): In the capacity of the National Focal Point of ENERGIA for Nepal, CRT/N has been managing the GEWNet since 2002;
- International Network for Sustainable Energy (INforSE), Denmark: CRT/N is the National Focal Point for Nepal since 2005;
- Clean Cooking Alliance formarlly know as Global Alliance for Clean Cookstoves (GACC): Through its support to RTKC at CRT/N, it has been supporting in the formation of International Standards on Clean Cookstoves and Cooking Solutions.

**Membership**

- Energy for All Partnership
- Gender and Water Alliance (GWA), the Netherlands
- Clean Cooking Alliance, USA
- Nepal Alliance for Clean Cookstoves (NACC) Nepal
- Global Village Energy Partnership (GVEP), UK
- International Union for Conservation of Nature (IUCN), Switzerland
- Partnership for Clean Indoor Air (PCIA), USA
- Solar Cookers International Association, USA
- The Mountain Fund, USA
- World Council of Renewable Energy (WCRE), Germany
- Global Gender and Climate Alliance Nepal (GGCAN)
- Indoor Air Pollution and Health Forum, Nepal
- The Alliance of Civil Society Organizations for Clean Energy Access (ACCESS Coalition)
- Climate Action Network South Asia (CANSA)

# Programmes/Projects:

## Eco-Village Development (EVD) through Integration of Renewable Energy Solutions and Climate Friendly Activities for Enhancing Livelihood of Rural Communities

Dr. Kamal Phuyal Facilitating a Training Session: Participants from Marin Rural Municipality Drafting Village Development Plan of Respective RM

**Background**

According to the Climate Risk Index (CRI) for 2017 published by Germanwatch, Nepal ranks 4th most vulnerable country in terms of climate related disasters. Countries with growing economies tend to focus on development activities in major cities and urban areas leaving behind large proportion of population in rural areas. The poorest groups of communities in rural areas thus are left vulnerable to both poverty and the effects of climate change. In addition, difficulties to ensure food security, lack of access to energy and deprivation of information and knowledge on low cost climate friendly development practices and technologies make these poor groups of people more susceptible to climate related

impacts. These problems have resulted in employment-based migration away from rural villages to urban cities and foreign countries. Livelihood opportunities for remaining inhabitants in rural Nepal are

gradually diminishing. All these circumstances call for innovative development intervention such as Eco-Village Development (EVD) concept.

The EVD concept gives emphasis to not just on poverty reduction but also introduce technologies, approaches and methodologies that contributes in reduction of Green House Gases (GHGs) to limit impact of climate change as much as possible. EVD concept is crucial in realization of sustainable development of rural sectors of the country and also produces result where development with poverty reduction and climate mitigation does not need to be in conflict.

Taking account to the aforementioned predicament, CRT/N in recent past had already introduced, practiced and demonstrated successful implementation of EVD concept in four wards of the Bethanchwok Rural Municipality. The success of the past EVD themed project encouraged the Bethanchwok Rural Municipality to further disseminate the concept in other villages that falls under their jurisdiction. This project was formulated to achieve development goals with low emissions and contribute in enhancement of rural livelihood.

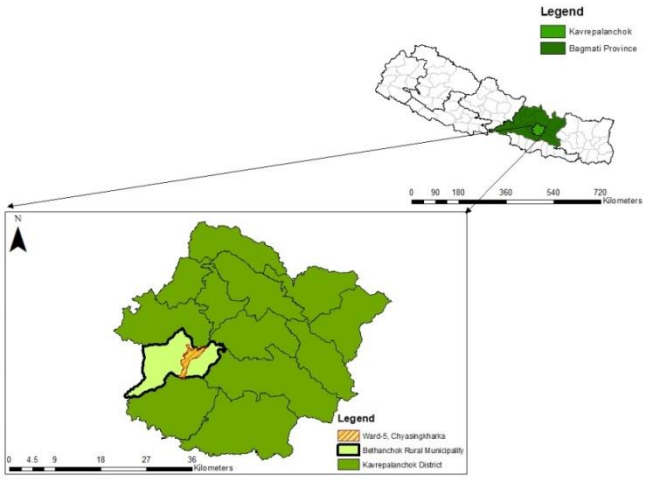
**Supported by:** CISU/DiB, Denmark **Project Duration:** December 2019 – April 2021

**Project Objectives**

To improve rural livelihood through integration of EVD solutions with rural livelihood practices and endeavors to strengthen rural development and reduce poverty by limiting GHGs emission and increasing adaptability against climate change impacts.

**Specific Objectives**

- To develop and demonstrate Eco-Village concept in the villages, as a best suited model for sustainable rural development.
- To develop an Eco-Village Development Plan for ward-5 of the Bethanchwok Rural Municipality.
- To encourage relevant stakeholders to create enabling environment for local financial institutes to finance EVD solutions.
- To identify market and link agro-based producers to the market network.




**Project Area**

The project will be implemented in Bhangala Village, Chyasingkharka-5, Bethanchwok Rural Municipality located in Kavrepalanchwok district, Bagmati Province, Nepal.

**Major Project Activities**

1. Organization of Program Initiation Workshop at local level
2. Collection of baseline data and assess need of project beneficiary households as per the scope of the project
3. Establish linkage between identified local financing institutes, project beneficiary households and relevant service providers/companies for loan to access EVD solutions.
4. Installation of EVD solutions
    - Altogether 100 households from the project area will have access to one or more EVD solutions. The project targets to disseminate following EVD solutions
    - 15 units of Biogas System
    - 50 units of various Improved Cook Stove (ICS)
    - Identification, repair and maintenance of five non-functional Improved Water Mill (IWM)
    - 10 units of solar dryer
    - Plantation of 100 trees (1 House 1 tree initiative)
    - Practice use of Plastic Tunnel, Micro Irrigation System (MIS) and bio-fertilizers and bio-pesticide in at least 30 households
    - Apart from providing wide range of EVD solutions in the project village, the project will also provide capacity building training to the inhabitants of the project village under following areas
    - Appropriate agro-based enterprise development
    - Building Plastic Tunnel and farming using the Plastic Tunnel and Micro Irrigation System
    - Production of organic fertilizers and pesticides to practice organic farming or pesticide less farming
    - Repair and maintenance of disseminated EVD solutions
5. Waste and water management
6. Provide capacity building trainings to the inhabitants of the project village
7. Develop Eco-Village Development Plan for Ward-5 in Bethanchowk Rural Municipality
8. Development of knowledge products, publications and project documentary
9. Exchange Visit and Demonstration & Orientation to Stakeholders
10. Project completion workshop and knowledge sharing

**Expected Outcomes**

- Raised awareness of project stakeholders from local and national level working in energy, environment and development sector regarding Eco-Village Development Concept
- Development of linkage between project beneficiary community, EVD solution suppliers and service provider and local financing institutes to finance EVD solutions
- 100 households will adopt at least one or more EVD solutions offered by the project.
- At least one member from every households of the project village will gain knowledge and skill via various capacity building trainings
- The agro-produce from the project villages will have improved access to the market network.
- An Eco-village Development plan document for Ward-5 will be ready which will be shared and communicated by the ward with the Bethanchowk Rural Municipality.

# emPOWER Collective Project –Phase II


Participants During the emPOWER Training

**Background**

Nepalese society is characterized by a social construct based on gender and caste-based hierarchy governed by patriarchal values and norms. With growing interest in creating a just and equitable society, a number of efforts are being made at different levels nationally and internationally to empower women and historically marginalized population. Historically, it is assumed that reservation policies and provision of resources (financial, educational, quota systems, property ownership, energy technologies etc.) automatically empower women and excluded groups. However, emerging evidence suggests that gender and socially inclusive policies and access to opportunities and resources alone may not be sufficient to ensure marginalized group's participation in decision making at household or outside (Kabeer 2005; Shah et al. 2007; Heise 2011). In community development efforts, marginalized groups and women's participation is often labeled as silent or passive participation. This suggests a need for not just empowerment through access to resources but also from within (by sparking desire to change and voice concerns) for women and the excluded groups.

**Supported by**

Climate and Health Research Network (CHeRN), USA

This research project has been facilitated by Dr. Tami Bond (Colorado State University), Dr. Anita Shankar (John Hopkins University) and in joint collaboration with Minergy.

**Project Objective**

This research project is designed to assess the impacts of a personal empowerment program designed to increase rural community specially women's voice and agency as a means of improving rural development activities through making them capable to choosing the suitable renewable energy technologies to improve their livelihood. Changes and progress in individual and community action plans will be compared at end line.

**Proposed Location:** Ward no. 5, Chyasingkharka, Bethanchok Rural Municipality, Kavre

**Proposed Duration:** January 2020 – December 2021.

# Gender, Energy and Water Network (GEWNet)

**Background**

The Gender Energy and Water Network (GEWNet) was established in Nepal as an output of the National Consultative Workshop held in August 2002. It was initiated with support from ENERGIA-International Network on Gender and Sustainable Energy. The network hosted by Centre for Rural Technology, Nepal (CRT/N) is currently a partner of Green and Inclusive Energy (GIE) Programme, which is financially supported by ENERGIA/Hivos.

The network focuses on specific lobby and advocacy goals (influencing policies and practices of market and government actors) as well as on strengthening advocacy capacities of civil society actors. It will also contribute in increasing gender inclusive use of renewable energy and water including appropriate technologies which will complement and contribute to Government of Nepal's initiatives like Clean Cooking Solution for all by 2030, Sustainable Development Goals (SDGs).

**Network Objective**

- Review policy gaps in Gender Equality and Social Inclusion (GESI) in renewable energy sector in Nepal;
- Promote economic opportunities for women and men while mitigating climate change;
- Influence the decision makers in policy making process for gender sensitive participation;
- Increase gender awareness integrating GESI; component through documentation and exchange of information;
- Promote gender friendly technologies and approaches and
- Sensitize and enhance capacity of network members/ institutions on gender issues.

Participants of Interaction Meeting with NARMIN Provincial Level Coordinators along with the Organizer Posing for a Group Photo after the Completion of Meeting

Major activities are carried out during the year 2019-20 are as follows:

- GEWNet conducted eight presentations on the theme of gender, energy and water during the period of September 2019-June 2020. The presentations were delivered by the experts of respective fields. Individual members and institutional partners of GEWNet as well as other interested individuals engaging in the related fields participated in the presentation.
- Interaction Meeting with NARMIN Provincial Level Coordinators on Integration of Gender Equality and Social Inclusion (GESI) in Energy Programmes and Projects
- Produced three articles related to gender, energy and water issues
- Engaging with Two Students from Naaya Aayam Multi-Disciplinary Institute (NAMI) for Research on Gender, Energy and Water Issues

# Promotion of Hydraulic Ram Pump Technology in Bhutan

Inauguration Ceremony of Newly Installed Hydraulic Ram Pump in Rubesa, Wangdue, Bhutan

**Background**

Rural Energy and Technology Service Centre (RETSC) in collaboration with Centre for Rural Technology, Nepal (CRT/N) has successfully piloted Hydraulic Ram Pump Technology in Bhutan in close cooperation with Bhutan Water partnership (BhWP) and Royal Society for Protection of Nature (RSPN)Kawajangsa, Thimpu. This very novel initiative on climate smart and innovative technology to address the water scarcity in rural communities of Bhutan was piloted under the financial support from Small Grant Programme of Global Environment Facility, United Nation Development (SGP/GEP/UNDP), Bhutan.

**Supported by:** SGP/GEP/UNDP, Bhutan in close cooperation with Bhutan Water partnership (BhWP) and Royal Society for Protection of Nature (RSPN) Thimpu, Bhutan.

**Project Location:** Nyachey-Geykha and Nyarobi Village Rubesa, Wangduephodrang district & Gangtey Wangduephodran

**Project Period:** February-December 2019

The Hydraulic Ram Pump Technology is an automatic pumping device which uses a large amount of water falling through a small head to lift a small amount of that water to a much greater height. It is a reliable and inexpensive water pumping system without the requirement of fuel or electricity, easy to maintain and with no associated greenhouse gas emissions.

The HRP pilot project of Rubesa is the first of its kind in the country and is said to be very popular in Nepal. It is being spearheaded by the Bhutan Water Partnership with financial assistance from UNDP and SGP and support from Dzongkhag Administration.

The Rubesa HRP pilot project dischages water to a vertical height of 110 meters and the horizontal length is 700 meters with a dischage of 0.1 liter of water per second. The project is going to benefit about 42 households in the community.

Community People in the Site of Newly Installed Hydraulic Ram Pump in Rubesa, Wangdue, Bhutan

# Improving Rural Livelihoods in Nepal with Pico-Hydro Electrification and Improved Water Mill

Local Beneficiary Contribution in Laying Foundation for the Forebay

**Background**

Center for Rural Technology, Nepal (CRT/N) has implemented "Improving Rural Livelihoods in Nepal with Pico-Hydro Electrification and Improved Water Mill" with the financial support from Siemenpuu Foundation, Finland. The project period was July 2018 - September 2019.

This project has installed two Pico-hydro units 9 kW in Makwanpur and 7.5 kW in Kavre for generating electricity. Beside electricity for lighting, the project has supported to improve the livelihood of the community by developing home based micro enterprises and income generating opportunities like Furniture Mill, Poultry Farm, Tailoring and Bee keeping that can be operated from electricity and use of light. Similarly, two units of Improved Water Mill and a Rice Huller mill have also been installed in the

project to support grinding and hulling of agro produce like maize, wheat, millet, rice etc. that helped to reduce workload of women and children for carrying their grains for grinding to far distance.

The project has conducted various capacity building and training activities for the communities especially for men and women that belong to the low economic quintile and deprived groups to facilitate in their livelihood enhancement along with operation, management, repair and maintenance of the Pico hydro systems.

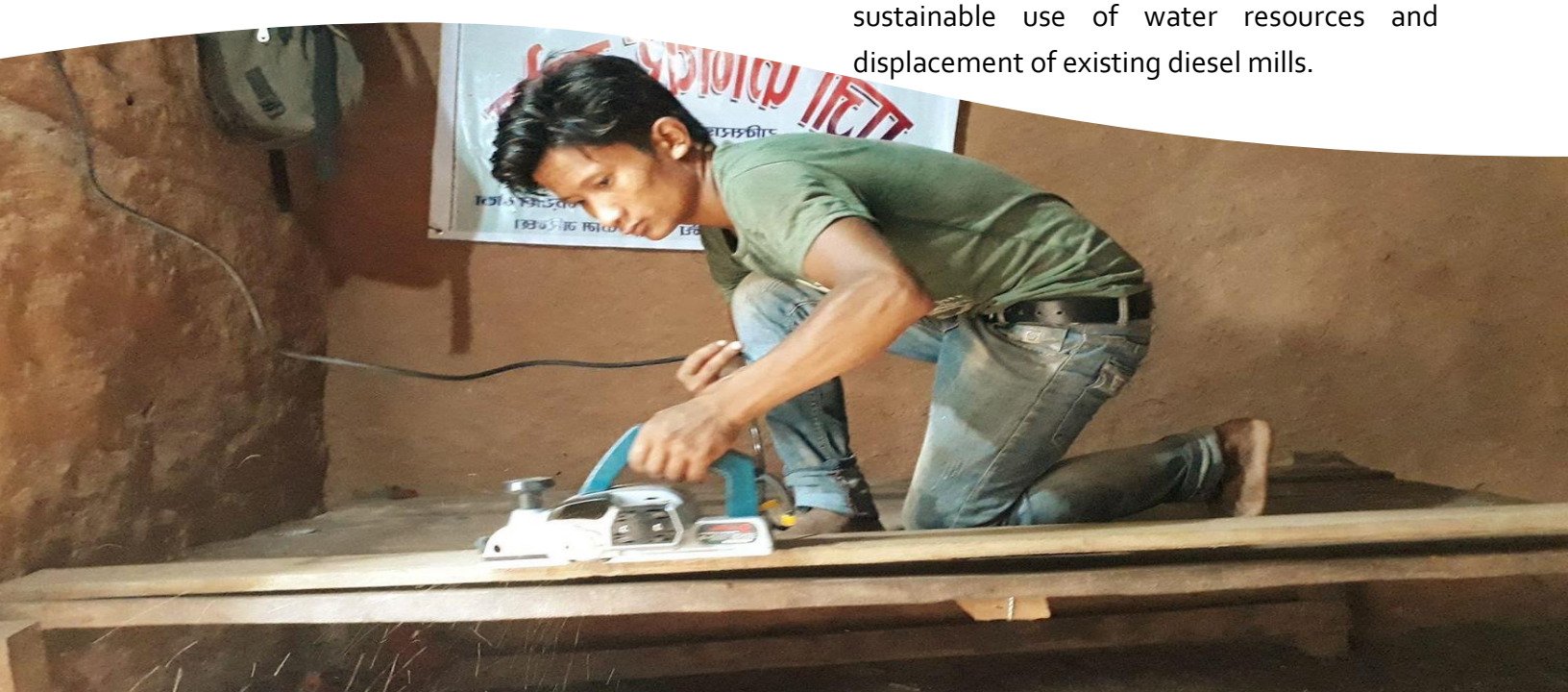
**Supported by:** Siemenpuu Foundation, Finland

**Project Objectives**

The project is focused on improving rural livelihoods in Nepal with Pico-Hydro Electrification and improved water mill in two communities. So, this project is mainly aimed: 1) improving health with the clean, efficient improved water mill and electricity based services displacing diesel mills, 2) reducing drudgery of women and children who otherwise are engaged in carrying agro-products for processing to distant mills for processing and iii) help in income generating and employment at local level from establishment of home based micro-enterprises operating directly or indirectly from electricity.

The specific objectives of the project are listed below:

- To uplift socio-economic and livelihood of the beneficiaries contributing to the community development through income and employment generation from the micro-enterprises and livelihood opportunities developed.
- To increase economic empowerment opportunities for women.
- To decrease in workload of women and children from carrying agro-products for processing at traditional mill and diesel mill to efficient Pico- Hydro systems like improved water mill and electricity operated mill.
- To increase the time spent by children in education as well increase in number of children (boys and girls) in education due to clean and sufficient source of lighting.
- To contribute for clean environment from sustainable use of water resources and displacement of existing diesel mills.



# Regional Cookstove Testing and Knowledge Center (RTKC) Nepal

Photo from RTKC Nepal Inventory: Testing of Burn Stove at RTKC Nepal Lab


**Background**

CRT/N is a partner of the Global Alliance for Clean Cookstoves (GACC), now known as Clean Cooking Alliance (CCA), a public-private initiative led by the United Nations Foundation (UNF) to save lives, improve livelihoods, empower women and preserve the environment by creating a thriving global market for clean cooking solutions. GACC has awarded the grant support to CRT/N for the project enhancing capacity of "Regional Cookstoves Testing and Knowledge Centre" (RTKC) in 2012. In line with GACC's mission, RTKC Nepal is dedicated to improve the testing facility and provides quality services to national stakeholders and extends its services to the regional level regarding capacity building, stoves testing, forming National Standards on Cookstoves Performance Testing and harmonizing with International Standards since its establishment.

**Objectives**

- Enhance testing capacity of RTKC mapping to the International Standard Organization (ISO) and International Workshop Agreement (IWA) Tiers of performance
- Modify/upgrade stove designs and develop clean cookstoves technology
- Establish effective knowledge dissemination and networking with other Stove Testing and Knowledge Centres at the national and regional level
- Offer testing and monitoring services to organizations at national and regional level

RTKC Nepal has been testing different kind of cookstoves like biomass based fuel wood stoves, forced draft: pellet and charcoal stoves and liquid fuel stoves in the lab as well as in the field. From the establishment to till date RTKC Nepal tested approx. 300 cookstoves including intuitional/large type of stoves. The tested stoves were from within the country as well as from USA, Kenya, Bhutan, Bangladesh, Pakisthan and India.

During the year 2019-20, RTKC Nepal team acquired refresher training and updating/upgradation of equipment associated with ISO testing from Mr. Ryan Thompson, Mountain Air Engineering, USA. Earlier to this training, the team was oriented about the protocol and the equipment required for conducting testing with new ISO protocol in 2018. The lab was also upgraded with equipment required for ISO cookstove testing during the orientation. The training was designed as per the requirement which was focused on the aspects of the ISO standard like quality assurance, calibrations including hands-on practice of emission tests.

# Self-help Eco-Village Development Project

**Background**

On 13Aug, 2019 (28th Shrawan 2076) Centre For Self-help Development (CSD) organized an interaction programme on "Current Challenges in Microfinance and Way Forward" where CRT/N presented the concept of Eco-Village development (EVD) model of various places of Bethanchowk, Kavre. The discussion was held with the participants about the concept of Self-help Eco-Village Development project. Fortunately, the discussion led to the establishment of the theory. If we take in account of our present activities, the planet Earth is and will be harshly affected by climate change; the impacts might be a cataclysm. After deep discussion during the seminar, it was concluded that Self-help Eco-Village Development project is advantageous to the rural areas where in order to live a happy life is defined by Energy, Food and water, importantly agriculture and security. Therefore, CSD presented a proposal to organize such concept in five different rural villages of Nepal by granting a sum of NRS.5, 00,000 for each village which makes NRS 25, 00,000 of total economic support.

After the program CRT/N, CSD and Manushi Nepal discussed and reached to the decision that Manushi Nepal will act as a partner for organizing the Self-help Eco-Village development project at Barabise-3, Dharpa by signing the tripartite agreement. Presently, the programme is implemented in Barabise-3, Dharpa by the partnership of Manushi Microfinance.

**Supported by:** Centre For Self-help Development (CSD) and MANUSHI Microfinance Ltd.

**Goals**

- To develop Eco-friendly concept as a best model for Sustainable Rural Development and for better quality of life,
- To coordinate with local micro finances for convenient and appropriate investment in order to add and boost the Eco-friendly technology and to improve income oriented mechanism,
- To encourage to utilize the local resources and skills predominantly,
- To help for formulating plans and policies with local decision making offices and microfinances for discouraging Foreign employment and for increasing the employment opportunities at a local level.

**Project Objective:**

The primary objective of Self-help Eco-Village Development Project is to investigate the alternatives and solutions to enhance the eco-friendly situation in order to reduce the green house gases effect and to minimize the impacts of climate change for better quality of life.

**Project Period:** August 2019 to February, 2022

**Project Partners:**

- Manushi Laghu Bitta Bittya Sanstha, Banepa kavre
- Manushi Laghu Bitta Bittya Sanstha, Dharpa -3 Barabise

# Solar Electrification of a Remote Village and Promoting Energy Planning Based on Reliable Data Collection in Nepal

**Background**

Energy sector is major pillars of development for Nepal. There are areas that are still dwelling in absence of electricity. In such areas off-grid sources of electricity can improve access to electricity. This project has therefore aimed to improve access to electricity for a rural village that is deprived of electricity from national grid. The project is funded by Siemenpuu Foundation and EKOenergy, Finland. Furthermore, the concept of this project emerged as there was additional demand for community rural electrification put forward by Khanikhola Rural Municipality. In this context, the project introduces solar mini-grid for electrification of the village deprived of access to electricity.

Apart from installation of solar mini-grid, the project will support in advocacy of importance of Municipal Energy Planning (MEP) in Federal Context. The MEP tool is Geographic Information System (GIS) based tool which was developed by Renewable Energy for Rural Areas (RERA) program jointly implemented by GIZ-Nepal and Alternative Energy Promotion Center (AEPC). This tool is yet to be piloted in Rural Municipalities of Nepal. The advocacy aspect of this project will emphasize on building capacity of the Local Government and energy professionals to develop robust energy plans and policies for their municipality. To facilitate evidence based advocacy regarding need of energy plans and policies to improve rural access to sustainable energy sources, a planning document along with policy brief will be developed based on the results of MEP tool for the Local Government. Advocacy efforts will also aim at building capacity of the relevant stakeholders on concept and importance of net metering and Multi-Tier Framework (MTF) developed by the World Bank and its adaptation in rural Nepal context to measure quality of electricity access.

**Supported by:** Siemenpuu Foundation and EKOenergy, Finland

**Project Objectives**

- Installation of 10 kW solar Mini-grid at Saurya Bhangtarbesi village-3, Khanikhola Rural Municipality, Kavrepalanchowk district, Province 3, Nepal to improve electricity access in the village.
- Capacity building of relevant stakeholder from Khanikhola Rural Municipality and energy sector stakeholders from local, provincial and national level on application of Municipal Energy Planning (MEP) Tool.
- Advocate on need and use MEP tool to develop energy plans and policies to relevant stakeholders representing local, provincial and national level Government CBOs/CSOs and private sector.

**Project Duration:** July 2020 to November 2021

**Project Area**

Saurya Bhangtarbesi village-3, Khanikhola Rural Municipality, Kavrepalanchowk district, Bagmati Province, Nepal.

**Major Project Activities**

- Detail Feasibility Survey and Tender Process for solar Mini-grid installation
- Installation of Solar Mini-grid system
- Sampling and data collection from all wards of the rural municipality to facilitate use of MEP tool
- Municipal Energy Planning Tool application and capacity building of stakeholders and enumerators
- Consultative workshop with energy sector stakeholders at all three levels of the Government
- School level sensitization program for project beneficiary school at municipal level
- End line survey to monitor and evaluate existing project output and outcome

**Expected Output**

- Beneficiary community and respective rural municipality will have Solar Mini-Grid of 10 kW capacity
- Improved access to modern electricity source and service for 120 households
- Establish or upgrade at least one micro-enterprise using electricity from solar Mini-Grid to realize productive end use of modern sources of energy
- One local school will have access to electricity
- 10-15 energy sector professional representing various private sectors and I/NGOs, CBOs from local, provincial and national level will be trained to use Municipal Energy Planning (MEP) Tool.
- 7 CSOs/CBOs at local level, relevant department and official representing Khanikhola Rural Municipality and its wards will benefit from the advocacy activities which includes topic such as Renewable Energy Technologies, Municipal Energy planning Tool, net metering and Multi-Tier Framework for measuring electricity access;
- Manual on Municipal Energy Planning Tool will be published
- Document tangible energy plan and policy brief that will contribute to improve access to modern energy sources
- Sensitization on renewable energy technologies to one school and local ward representatives on modern energy sources, renewable energy technologies and importance of energy planning for local development

# Strengthening the Capacity of Nepal's Energy Sector to Deliver Gender Equality and Social Inclusion (GESI) Results

**Background**

The TA 9334-NEP entitled 'Strengthening the Capacity of Nepal's Energy Sector to Deliver Gender Equality and Social Inclusion (GESI) Results' is piggy backed to the loan project, 'Loan 3542-NEP: Power Transmission and Distribution Efficiency Enhancement Project'. It is funded by Asian Development Bank (ADB) with support from the Japan Fund for Poverty Reduction (JFPR) to ensure GESI mainstreaming in the loan project. The scope of the project covers 3 key outputs:

**Output 1:** Strengthened capacity of the Nepal Electricity Authority (NEA), and National Association of Community Electricity Users-Nepal (NACEUN) in mainstreaming GESI in energy programmes and projects,

**Output 2:** Productive use of clean energy technologies and services by poor and vulnerable households and,

**Output 3:** Developed capacity of NEA staff in new energy technology applications.

Additionally, to ensure the effective and efficient execution of Output 2, the project received complementary funding from 'Empowering Women Engendering Energy' project supported by the Swedish International Development Agency (Sida). This complementary funding supports the strategic engagement with NACEUN, Monitoring, Communications and Access to Finance activities at the level

of the final beneficiaries i.e. women from poor and vulnerable households. The output 2 of TA project is being implemented by a consortium the International Network on Gender and Sustainable Energy (ENERGIA)/ Hivos (People Unlimited), the led, Centre for Rural Technology, Nepal (CRT/N), Practical Action Consulting (PAC) Nepal and National Association of Community Electricity Users Nepal (NACEUN) (Strategic Partner).

**Supported by:** Asain Development Bank with support from the Japan Fund for Poverty Reduction (JFPR) and Swedish International Development Agency (Sida)

**Partners:** CRT/N, Practical Action Consulting (PAC) Nepal and National Association of Community Electricity Users Nepal (NACEUN), Strategic Partner.

**International Project Partner:** International Network on Gender and Sustainable Energy (ENERGIA)/ Hivos (People Unlimited)

**Project Districts:**
Dolakha, Ramechhap, Sindhupalchowk, Kavre, Lalitpur, Dhading, Chitwan and Sindhuli

**Project Duration:** January 2019-June 2020

**Project Objective**

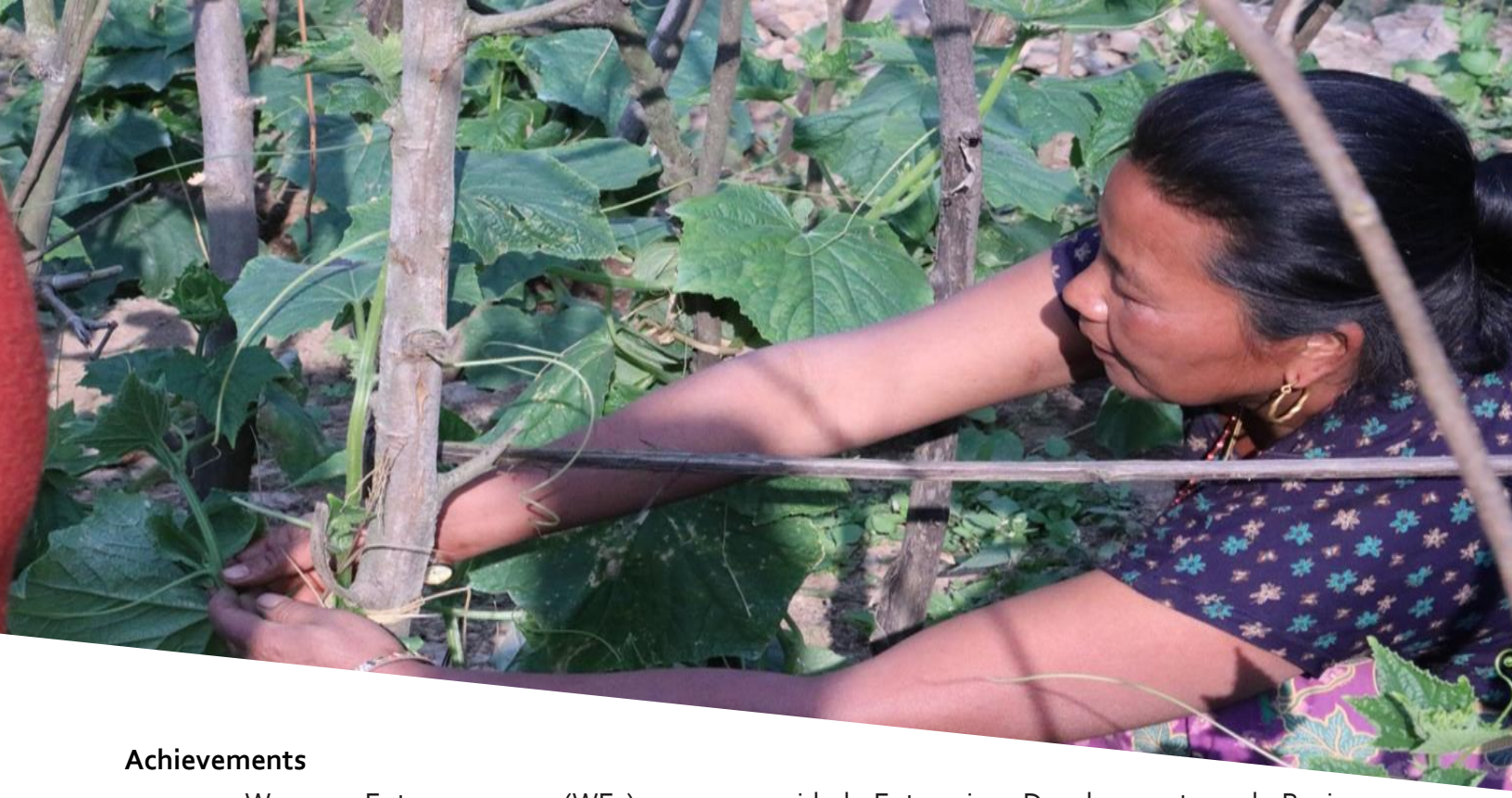
The objective of output 2 is to promote GESI in accessing and supporting productive use of clean energy technologies and services by women, the poor and vulnerable households of Electricity User Cooperatives (EUCs).

Output 2 aids the women from poor and marginalised communities, in a holistic manner, in achieving their potentials of enterprise creation/ development through various livelihood and businesses opportunities. This encourages women to engage in productive use of energy contributing to increase their electrical demand from EUCs and thereby enhancing their sustainability.

**Key Activities/Targets:**

- Institutional capacity development of 15 EUCs from 7 districts on Productive Use of Energy Promotion, Energy Efficiency and Electrical Safety;
- Provide entrepreneurship development, business management and technical skill training to 500 women from poor and marginalized groups;
- Provide post-training supports for accessing finance, market and appropriate technologies, and establishing linkages with eco-system

Memorandum of Understanding Signing Between Agriculture Development Bank Ltd. and the Project



**Achievements**

- 507 Women Entrepreneurs (WEs) were provided Enterprise Development and Business Management Training incorporating Agency based Empowerment concepts. In addition, intensive post-training supports were provided to all 507 WEs by 10 Enterprise Development Coordinators (EDCs) deputed in respective working areas. Therefore, the early results are encouraging, 292 WEs set up a new businesses or expand business their current businesses with total investments of NPR 50.17 Million ($414,343 - Ex. Rate $ @ 1 = 120.714/ 27 April, 2020). So far, 261 WEs have maintained a separate book of accounts. After completion of Entrepreneurship and Business Management Training, it was planned to start skill training; unfortunately, the skill training could not be started due to the COVID-19 situation.
- Forty one EUC personnel and 6 EDCs were imparted knowledge on energy management on efficient use of electricity, use of new technologies and electrical safety. EUCs have realized the importance of energy management and committed to provide necessary supports to WEs.
- The project has also been regularly facilitating and counseling for selecting and purchasing appropriate energy efficient technologies, in total, 74 WEs have adopted energy efficient technologies in their business.
- The project has been continuously working with market actors for market transformation and creating accessible market opportunities for WEs. In total, 207 WEs have been facilitated for market linkages out of which 98 WEs for backward linkages and remaining 109 WEs for forward linkages.
- Close engagement with the ecosystem stakeholders have also positively contributed to create conducive environment for our WEs at local level.  . In total, 139 WEs have registered their businesses at Cottage and Small Industry Development Board/Office, local government and Inland Revenue Office and 50 WEs received financial and technological supports from entrepreneurial ecosystem stakeholders.

- With continued coordination and collaboration with Banks and Financial Institutions at central and local levels, 85 WEs have been successful in receiving loan amount of NPR 22.94 million ($190,053). All WEs have been repaying loan within due date and none of them are defaulter.

In order to address the financing gaps of women entrepreneurs, the project has signed MoU with Agriculture Development Bank Ltd. (ADBL) on 20 October, 2019. Major terms and conditions of MoU are presented below.

- Provide credit to bankable WEs against collateral or without collateral base/subsidized loan scheme 2075 B.S
- Organize the interaction / training on crop and livestock insurance;
- Provide e-banking services to EUCs and WEs with subsidized rates;
- Conduct financial literacy programs to WEs, if requires;
- The Bank can support EUCs in physical and infrastructure development under its Corporate Social Responsibility (CSR) programme.
- In order to disseminate information and successful interventions to the local, national and international stakeholders, communication related activities have been carried out and are in progress. For instance, a mobile app called "Mahila Udhami" (women entrepreneur) has been developed and information useful to women entrepreneurs has regularly being provided through app.

EUCs have already realized the benefit of productive use of energy that increase the uses of electricity resulting in increased revenue and hence taking lead for execution of all project activities along with coordination and collaboration with eco-system stakeholders including local government.

*Local Government and ADBL Central Office promptly addressed the issue of loan without collateral in Sindhuli. Most of the WEs and their family do not have their own land and living in the government land in Sindhuli. Local government provided recommendation document to WEs for registration, without which it was almost impossible to register their business in CSIDB/O and Inland Revenue Office. Similarly, ADBL has agreed to provide loan without collateral for these registered businesses. WEs are currently in documentation process. They will apply for loan immediately after situation gets normal.*

# Strengthening the Eco-Village Development concept: Affordable Local Climate Actions for Sustainable Development in South Asia

**Background**

Through two previous projects, the project partners in this proposed intervention have been demonstrating, building up the evidence, advocating for Eco-Village Development in South Asia and for scaling up the concept on a larger scale. The EVD concept combines a number of local solutions for poverty reduction within sustainable energy, water management, agriculture and housing. External evaluations and feedback have found the Eco-Village Development (EVD) concept highly relevant, especially at household and community level. Combined, the solutions have been able to provide an approach to mobilize the energy and resources needed for a development out of poverty for rural villages with minimal greenhouse emissions, sparking a prosperous vision for the sustainable development of rural areas.

The overall objective of the intervention is to identify four new areas/climate zones in South Asia and their relevant stakeholders ready for Eco-Village Development (EVD) implementation by the end of the intervention. In Nepal, study has been carried out in Bhalumara village, ward. No. 3 of Marin rural Municipality (MRM), Sindhuli, Province no. 3, which lies in a Lower Flat land. Target group are representatives of Marine rural municipality, development officer, and other community based organization working in that area.

**Supported by:** CISU/DiB, Denmark

**Specific objectives are as follow:**

- Four feasibility studies have been developed for four new areas/climate zones in South Asia, one for each country.
- Relevant stakeholders with the multiplier opportunity, such as development officers, local and district government's bodies, NGO's etc., have increased their knowledge about and capacity in how to implement the EVD concept and approach.
- The partners have identified if and how a social enterprise model for Eco-Village Development can be developed for policy makers and investors/businesses
- The partners have expanded the resource pool of engaged partner organizations outside the renewable energy sector in all four countries for broader scope of involvement and inclusion.

**Project Period:** August 2019- July 2020

**Achievements:**

- Three stage data collection at project site (rural municipality, ward and village cluster) has identified feasible EVD solutions. Such as solar water lifting, ICS, RWH, Plastic tunnel and micro-irrigation solutions, organic farming
- Moderately feasible solutions were solar street light, solar dryer, biochar, cowshed management, and plastic ponds
- Regarding capacity building training, the community wanted to have training on modern farming practices, vegetable farming, marketing for agro-produce and animal husbandry.
- The local stakeholders from the Government, CBOs/NGOs, private sectors and MFIs were trained on use of PRA approach to develop eco-village plan.
- At national level new organizations have been mapped and expanded to engage in future intervention

# The Green and Inclusive Energy (GIE) Programme in Nepal


**Background**

With financial support from the Netherlands Government, Ministry of Foreign Affairs, technical support from ENERGIA/Hivos and policy support from the Alternative Energy Promotion Centre (AEPC), GIE Programme started its journey in Nepal since October 2016. The aim of this programme is to engage to "support a transition towards green and inclusive energy systems not only to better meet the energy access needs of the poor and reduce climate change, but also lead to improvements in family health, food supplies, income and opportunities for women in order to allow them to participate more productively politically, socially and economically".

The GIE Programme in Nepal is led by Centre for Rural Technology, Nepal (CRT/N). It is implemented in partnership with Indoor Air Pollution and Health Forum (IAPHF), Nepal Forum of Environmental Journalists (NEFEJ), Renewable Energy Confederation of Nepal (RECoN), National Association of Community Electricity Users Nepal (NACEUN), Practical Action Nepal and Gender, Energy and Water Network (GEWNet).

| Category | Name of Organisation |
|---|---|
| National Lead | CRT/N |
| Media | NEFEJ |
| Gender | GEWNet managed by CRT/N |
| Research | Practical Action |
| Consumer | NACEUN |
| Health | IAPHF |
| Private Sector | RECoN |

| District | Urban Municipality | Rural Municipalities |
|---|---|---|
| **Udaypur** | Katari | Udaypur Gadhi, |
| | | Rampur |
| **Sindhuli** | Dudhauli | Marine, Hariharpurgadhi, Fikkal |
| | Kamalamai | |
| **Kavre** | Baluwa | Temal |
| | | Bethanchowk |
| **Nawalpur** | Gaidakot | Binay Tribeni |
| **Palpa** | Tansen | Raina Devi Chahara |
| **Gulmi** | Musikot | Chandrakot |
| | Resunga | |
| **Lalitpur** | | (Gotikhel) Mahankal, Bagmati & Kyonjosom |

**Supported by:** International Network on Gender and Sustainable Energy (ENERGIA)/Hivos.

**Policy Support:** Alternative Energy Promotion Centre (AEPC).

**National Partners:** NACEUN, IAPHF, NEFEJ, RECoN, Practical Action Nepal and GEWNet.

**Project Objective:**

To contribute to the development of an enabling policy environment to meet the domestic and productive energy needs of the socially disadvantaged groups, women, and marginalized groups through decentralized renewable energy and clean cooking energy solutions.

**Activities**

- Build capacity of project partners to contribute to the execution and operationalization of the Theory of Change.
- Raise awareness on GIE and GESI
- Develop and implement transparency and accountability activities
- Develop and implement Lobby and Advocacy strategy at National, Province and local level
- Develop school curriculum for 6-8 classes & Curriculum with Course Book for class 1-5 on renewable energy
- Identify focus of private sector engagement in the renewable energy sector
- Develop communication strategy,

**Expected outcome**

- Network strengthened in terms of enhanced ownership feeling and active participation of the members
- Knowledge and skill enhancement of network members along with encouragement to involve in gender and energy arena.
- An effective contribution to the development of an enabling policy environment to meet the domestic and productive energy needs of the poor, women, and marginalized groups through decentralized renewable energy and clean cooking energy solutions in Local, Provincial and Central level.

**Achievements**

- Inclusion of GIE agenda in the Annual Policy and Programme FY 2076/77 (2019/2020) In July 2019, by local government in Dudhauli Municipality, Marin Rural Municipality, Phikkal Rural Municipality and Hariharpur Gadhi Rural Municipality).
- Curriculum in use in 28 schools of Mahankal Rural Municipality since the new academic year 2019/20. Revised the developed Course Book for classes 1-5 as per the local stakeholder's feedbacks and revised framework of Curriculum Development Board. In this regards, Mahankal Rural Municipality also contributed through providing some budget.
- Amendment of Electricity Act, Electricity & Community Electrification Bylaws
- Capacity building of Community Rural Electrification Entity (CREEs) regarding organizational strengthening
- Available of free electric meters to Dalit and marginalized, financially poor groups by NEA
- Sensitization to Journalist (Trainings/ Field Visit and Fellowships)
- Developed training manual on indoor air pollution

**Lessons:**

In absence of dedicated field staffs faced various obstacles on local level coordination, to identify the potential participants/ stakeholders and regular follow-up to achieve the expected outcomes.

Decision making to formulate the Policy is time taking process, during the project period have done sufficient exercises & prepared conducive environment.

# Financials Updates

## ग्रामीण प्रविधि केन्द्र
## Centre for Rural Technology, Nepal
### Balance Sheet
### As on Ashadh 31, 2077 (July 15, 2020)

| Particulars | Sch. | FY 2076-77 | FY 2075-76 |
|---|---|---|---|
| **Capital & Liabilities** | | | |
| **Reserve Funds** | | | |
| **General Reserve** | | **8,127,204.85** | **8,112,237.56** |
| Last Year | | 8,112,237.56 | 8,081,575.69 |
| Add: This Year Surplus | | 14,967.28 | 30,661.87 |
| **Staff Welfare Fund** | | **364,970.00** | **363,307.00** |
| Last Year | | 363,307.00 | 359,901.00 |
| Add: This Year addition | | 1,663.00 | 3,406.00 |
| Less: This Year Payment | | - | - |
| **Gratuity Fund** | | **5,200,493.13** | **4,459,763.01** |
| Last Year | | 4,459,763.01 | 3,252,934.01 |
| Add: This Year addition | | 740,730.12 | 1,206,829.00 |
| Less: This Year Payment | | - | - |
| **Technology Study & Research Fund** | | **310,829.00** | **343,829.00** |
| Last Year | | 343,829.00 | 343,829.00 |
| Add: This Year addition | | 63,000.00 | - |
| Less: This Year Payment | | (96,000.00) | - |
| **Fixed Assets Reserve Fund (Projects)** | | | |
| Fixed Assets Reserve Fund | | 1,378,028.57 | 1,832,512.59 |
| **Current Liabilities & Provisions** | | | |
| Sundry Creditors | 10 | 16,911,222.51 | 6,939,608.37 |
| Staff Payables | 11 | 160,174.00 | 189,472.00 |
| Project Advances | 12 | 11,314,368.24 | 10,892,154.16 |
| Provision and Payables | 13 | 2,132,360.00 | 807,946.00 |
| **Total** | | **45,899,650.29** | **33,940,829.69** |
| **Assets** | | | |
| Fixed assets | 1 | 327,015.97 | 412,267.97 |
| Fixed Assets (Projects) | 2 | 1,378,028.57 | 1,832,512.59 |
| **Investment** | | | |
| Fixed Deposit | 3 | 3,700,000.00 | 3,700,000.00 |
| **Current Assets & Advances** | | | |
| Sundry Debtors | 4 | 22,521,393.20 | 10,892,258.00 |
| Staff Advances | 5 | 246,290.00 | 1,230,666.00 |
| Citizens Investment Trust | 6 | 3,549,990.50 | 3,549,990.50 |
| Deposits | 7 | 71,500.00 | 61,500.00 |
| Prepaid Expenses | 8 | 15,717.00 | 15,168.00 |
| Cash and Bank Balances | 9 | 14,089,715.05 | 12,246,466.63 |
| **Total** | | **45,899,650.29** | **33,940,829.69** |

Significant Accounting Policies & Notes to Accounts 19
Schedule 1 to 18 form an integral part of the financial statements

As per Our Attached Report of even date

Ananda Shova Tamrakar
Chairperson

Ganesh Ram Shrestha
Executive Director

CA. Narayan K. Joshi
N. K. Joshi & Co.
Chartered Accountants

Hari Gopal Gorkhali
Treasurer
Date: 2077/06/28

Pawan K. Singh
Sr. Account Officer

N. K. Joshi & Co. * Kathmandu * Chartered Accountants

# Financials Updates

## ग्रामीण प्रविधि केन्द्र
## Centre for Rural Technology, Nepal
### Income & Expenditure Account
For the Year ended Ashadh 31, 2077 (July 15, 2020)

| Particulars | Sch | FY 2076-77 | FY 2075-76 |
|---|---|---|---|
| **Incomes** | | | |
| **Contribution from Projects** | | | |
| Contribution from Projects | 14 | 10,820,864.03 | 11,836,081.00 |
| Other Receipts | 15 | 1,722,911.96 | 968,886.30 |
| **Received for Project Expenses** | | | |
| Received for Projects/ Program Expenses | 16 | 55,730,259.09 | 51,998,284.94 |
| **TOTAL INCOME** | **A** | **68,274,035.08** | **64,803,252.24** |
| **Administrative Expenses** | | | |
| Administrative Expenses | 17 | 13,548,103.73 | 14,229,470.05 |
| **Project Expenses** | | | |
| Project/Program Expenses | 18 | 54,710,975.04 | 50,539,162.70 |
| **TOTAL EXPENDITURE** | **B** | **68,259,078.77** | **64,768,632.75** |
| **Surplus before exchange gain/loss** | | **14,956.31** | **34,619.49** |
| **Exchange Gain/ (Loss) in Euro A/c** | | **1,673.97** | **(551.62)** |
| **Surplus (Deficit) after Exchange gain / loss** | **A-B** | **16,630.28** | **34,067.87** |
| **Transfered to Staff Welfare Fund** | | **1,663.00** | **3,406.00** |
| **Balance Transferred to Balance Sheet** | **A-B** | **14,967.28** | **30,661.87** |

As per Our Attached Report of even date

Ananda Shova Tamrakar
Chairperson

Ganesh Ram Shrestha
Executive Director

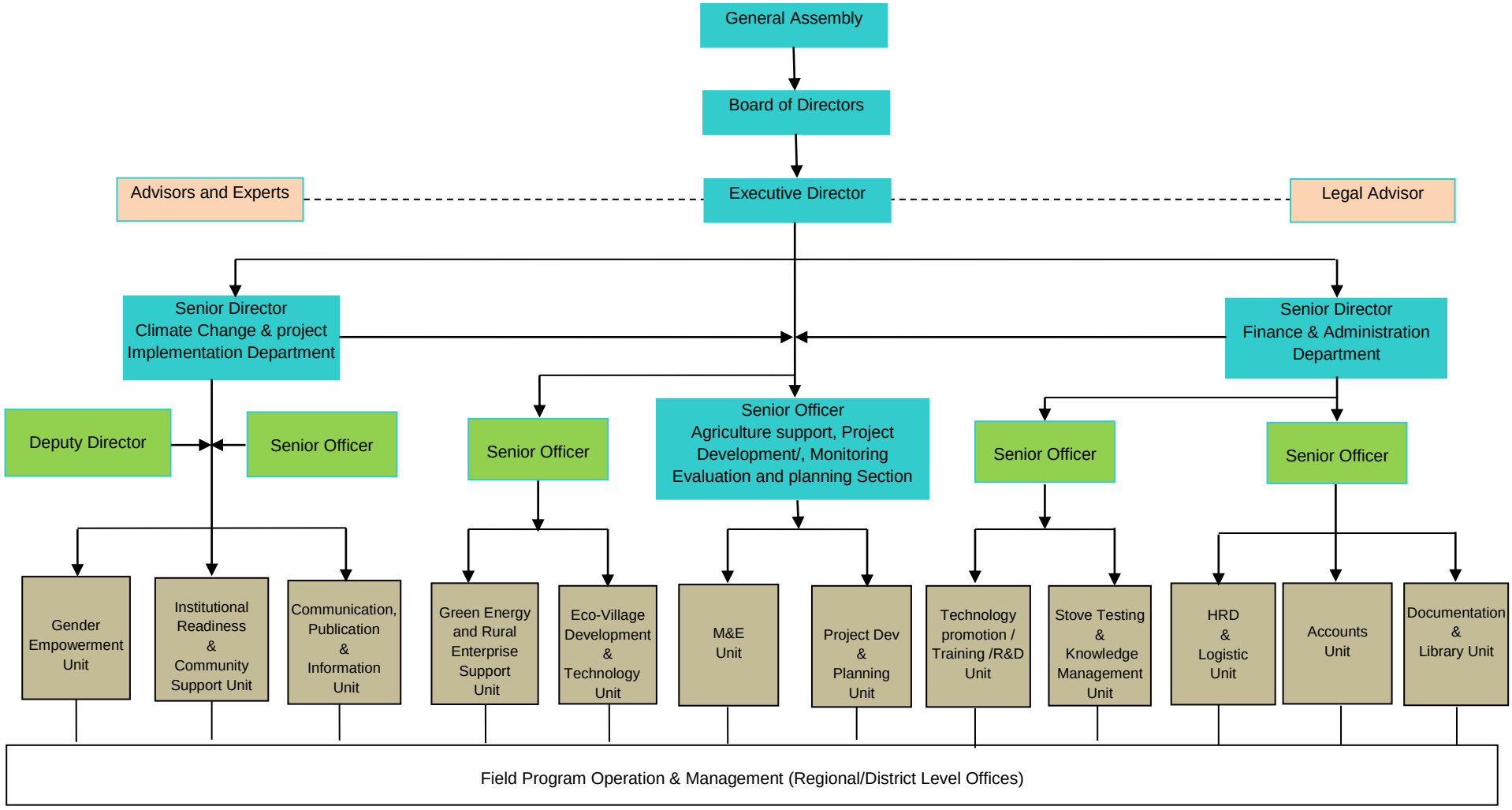
CA. Narayan K. Joshi
N. K. Joshi & Co.
Chartered Accountants

Hari Gopal Gorkhali
Treasurer

Pawan K. Singh
Sr. Account Officer

Date: 2077/06/28

# Organizational Chart (FY 2077-78)



# Board of Directors

**Dr. Ananda Shova Tamrakar, Chairperson**

Dr. Tamrakar was a professor at Tribhuvan University. She has served Tribhuvan University for 37 years. Besides teaching, she is conducting researches on pest management, water management, vermin composting and biodiversity. She has pursued Ph.D. from India. She has completed her Diploma of Environmental Management and Protection from University of Technology, Dresden, Germany. She has been awarded US-AEP Fellowship by Asia Foundation in USA. She remained Board Member of CRT/N since 2002 and also served as a Board Member of Mahila Sahayogi Bachat Tatha Rin Sahakari Sanstha Ltd. Besides, she is the president of Trans-Himalayan Environment and Livelihood Programme (T-HELP). She is also the member of Federation of Women Entrepreneurs Association (FWEAN). She has about 100 research publications (includes both national and international publication).

**Mr. Ganesh Ram Shrestha, Member Secretary**

Mr. Shrestha is a founder member of the Centre for Rural Technology, Nepal (CRT/N) established in August, 1989. He is also serving as Executive Director. Under his leadership, CRT/N is widely known for its pioneering efforts in the development and promotion of the renewable energy and appropriate technologies such as improved cookstoves, improved water mill and other rural technologies vital for enhancing rural livelihoods and sustainable development. Under his leadership, CRT/N has developed successful partnership with national institutions and strategic cooperation and collaboration with key international agencies. He has been instrumental in mobilizing technical and financial resources. He has contributed towards the planning and managing successful programmes and projects through his carrier. Mr. Shrestha has pursued Post Graduate Diploma in Rural and Agricultural Project Planning from Institute of Social Studies (ISS), the Hague, the Netherlands and Bachelor's Degree in Agricultural Engineering from Israel Institute of Technology from Haifa, Israel. He has also been granted an Overseas Fellow of the Economic Development Institute (EDI) of the World Bank.

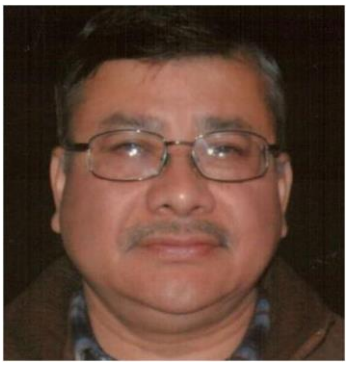
**Mr. Hari Gopal Gorkhali, Treasurer**

Mr. Gorkhali holds Bachelor's Degree in Agriculture (B.Sc.Ag.). He is the Chairman at Rural Energy and Technology Service Center (RETSC). He worked for more than 34 years in the Agricultural Development Bank, Nepal in various capacities such as General Manager (CEO), Deputy General Manager (Deputy CEO), Regional Manager, etc. He has 26 years of experiences in renewable energy sector with key experiences on guiding in promotion and development of various Renewable Energy Technologies such as Improved Cookstove (ICS), Improved Water Mill Technology (IWM), Briquette Technologies and Hydraulic Ram Pump for the benefit of rural communities.

**Mr. Lumin Kumar Shrestha, Member**

Mr. Shrestha holds M.Sc. Degree in Agriculture Economics from University College of Wales, UK. He is one of the founder members of CRT/N. He holds about three decades of experiences in various rural and appropriate technologies during his tenure at CRT/N. He also had experiences of agricultural financing while working in various capacities in the Agricultural Development Bank, Nepal for 20 years.

**Dr. Krishna Raj Shrestha, Member**



Dr. Shrestha was a Professor at Research Centre for Applied Science and Technology (RECAST), Tribhuvan University. He has more than 35 years of professional experience in the field of renewable energy and holds a Ph.D. Degree in Chemical Engineering from Indian Institute of Technology Delhi, India. After serving RECAST for 38 years, he has been teaching in the Central Department of Environmental Science (CDES), Tribhuvan University as a Visiting Professor and has supervised a number of students for their Master's Thesis. He has published a number of papers in various national and international journals. Dr. Shrestha has participated in several national and international seminars, conferences, workshops and training programmes pertaining to energy and environmental issues. He has coordinated several national level projects funded by INGO's and Government agencies and successfully conducted a number of training programmes on energy saving devices such as improved cook stoves (ICS), biomass briquettes and management of domestic wastes through Composting and Vermicomposting at different parts of the country.

**Mr. Vishwa Bhushan Amatya, Member**

Mr. Amatya has over 35 years of professional experiences in public, private and development sector. His recent works spanning over 18 years are in the field of project/programme development, planning, implementation and monitoring and evaluation towards energy access improvements in Nepal. He has an Engineering Bachelor degree from University of Jodhpur, India and Master in Applied Science in Systems Design Engineering from University of Waterloo, Ontario, Canada. Some of his recent assignments as a team leader are, i) Result Based Financing (RBF) project for cook-stove market development and access to Finance, ii) imparting training of trainers on Energy Access and Climate Data to Faculties of University of DAWEI, Tanantheri, Myanmar, iii) GEF Project formulation for UNDP, RERL GEF/UNDP, on Mini Hydro and Large scale solar PV system for livelihood applications, etc.

**Ms. Shova Bajracharya, Member**

Ms. Bajracharya has over two decade of experience in the microfinance sector and currently leads the Manushi Laghubitta Bittiya Sanstha Ltd. as Chief Executive Officer (CEO). She started her professional career as an Assistant Lecturer at the Hiralal Multiple Campus and working in development organization such as SEARCH and IIDS thus contributing to her experience in the education and development sector. She is equipped with a Master's Degree in Economics from Tribhuwan University. Her educational qualification is further enriched with her experience of managing microfinance and community development programs exclusively focusing on women. Ms. Bajracharya takes keen interest in learning from other institutions successfully implementing microfinance and development programs by participating in study visits, seminars and workshops.

# CRT/N Personnel

* Left during FY 2019/20

### Management Team

1. Mr. Ganesh Ram Shrestha, Executive Director
2. Mr. Hari Gopal Gorkhali, Senior Director
3. Mr. Lumin Kumar Shrestha, Advisor
4. Dr. Purushottam Shrestha, Senior Director
5. Mr. Shyam Kumar Rai, Deputy Director

### Account & Administration Team

1. Mr. Pawan Kumar Singh, Senior Accounts Officer
2. Mr. Raju Maharjan, Accounts Officer
3. Ms. Gita Subedi, Senior Assistant
4. Mr. Manish Maharjan, Account Assistant
5. Mr. Ram Krishna Dawadi, Driver
6. Mr. Sudesh Man Singh, Messenger
7. Mr. Ramesh Khadka, Messenger
8. Ms. Sanu Maiya Singh, Messenger

### Programme Implementation Team

1. Dr. Indira Shakya, Consultant
2. Dr. Ashma Vaidya, Consultant
3. Ms. Shovana Maharjan, Senior Officer
4. Ms. Ashma Pakhrin, Senior Officer
5. Ms. Namuna Bhumi Shrestha, Officer *
6. Mr. Prabin Shrestha, Officer (On Study Leave)
7. Ms. Shita Pandey, Officer
8. Ms. Gyanu Bist, Officer
9. Mr. Sanubabu Pandit, Officer
10. Ms. Kaushila Rai, Officer
11. Ms. Cheeja Adhikari, Officer
12. Mr. Subas Lamichhane, Officer
13. Mr. Farsha Bahadur Tandan, Senior Technical Assistant
14. Mr. Rajendra Ghimire, National Social Mobilizer
15. Mr. Bodhraj Bhandari, National Social Mobilizer
16. Mr. Khadga Bahadur Thapa, National Social Mobilizer
17. Mr. Bhupendra Pandey, National Social Mobilizer *
18. Mr. Likh Ram Chaudhary, National Social Mobilizer
19. Ms. Indu Aryal, National Social Mobilizer
20. Ms. Mina Basnet, National Social Mobilizer
21. Mr. Deepak Bohara, National Social Mobilizer
22. Mr. Rup Bahadur Deuba, National Social Mobilizer
23. Mr. Prashanta Bajracharya, Intern *

# CRT/N Working District

| S.N. | Name of Project | Working District/Area |
|---|---|---|
| 1. | Eco-Village Development (EVD) through Integration of Renewable Energy Solutions and Climate Friendly Activities for Enhancing Livelihood of Rural Communities | Chyasingkharka-5, Bethanchwok Rural Municipality, Kavrepalanchwok |
| 2. | emPOWER Collective Project –Phase II | Chyasingkharka-5, Bethanchwok Rural Municipality, Kavrepalanchwok |
| 3. | Hydraulic Ram Pump Technology in Bhutan | Out of Country (Bhutan) |
| 4. | Improving Rural Livelihoods in Nepal with Pico-Hydro Electrification and Improved Water Mill | Rakshirang Rural Municipality and Khanikhola Rural Municipality, Makwanpur and Kavre |
| 5. | Self-help Eco-Village Development Project | Barabise-3, Dharpa, Sindhupalchowk |
| 6. | Solar Electrification of a Remote Village and Promoting Energy Planning Based on Reliable Data Collection in Nepal | Khanikhola Rural Municipality, Kavrepalanchowk |
| 7. | Strengthening the Capacity of Nepal's Energy Sector to Deliver Gender Equality and Social Inclusion (GESI) Results | Dolakha, Ramechhap, Sindhupalchowk, Kavre, Lalitpur, Dhading, Chitwan and Sindhuli |
| 8. | Strengthening the Eco-Village Development concept: Affordable local climate actions for sustainable development in South Asia | Marine Rural municipality, Sindhuli |
| 9. | The Green and Inclusive Energy (GIE) Programme in Nepal | Sindhuli, Lalitpur, Palpa, Gulmi, Nawalpur, Kavre |

# Abbreviations

| | |
|---|---|
| ACCESS Coalition | Alliance of Civil Society Organizations for Clean Energy Access |
| ADB | Asian Development Bank |
| ADBL | Agriculture Development Bank Ltd |
| AEPC | Alternative Energy Promotion Center |
| CANSA | Climate Action Network South Asia |
| CBOs | Community Based Organizations |
| CBS | Central Bureau of Statistics |
| CISU | Civil Society in Development |
| CRI | Climate Risk Index |
| CRT/N | Centre for Rural Technology, Nepal |
| CSD | Centre For Self-help Development |
| CSOs | Civil Society Organizations |
| CSR | Corporate Social Responsibility |
| EDCs | Enterprise Development Coordinators |
| EnDev | Energising Development Partnership |
| ENERGIA | International Network on Gender and Sustainable Energy |
| EUCs | Electricity User Cooperatives |
| EVD | Eco-Village Development |
| FY | Fiscal Year |
| GEF/SGP | Global Environment Facility Small Grants Programme |
| GESI | Gender Equality and Social Inclusion |
| GEWNet | Gender, Energy and Water Network |
| GGCAN | Global Gender and Climate Alliance Nepal |
| GHGs | Green House Gases |
| GIS | Geographic Information System |
| GiZ | German Agency for International Cooperation |
| GoN | Government of Nepal |
| GVEP | Global Village Energy Partnership |
| GWA | Gender and Water Alliance |
| IAPHF | Indoor Air Pollution Health Forum |
| ICS | Improved Cook Stove |

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| INforSE | International Network for Sustainable Energy |
| ISO | International Standard Organization |
| IUCN | International Union for Conservation of Nature |
| IWA | International Workshop Agreement |
| IWM | Improved Water Mill |
| IWME | Improved Water Mill Electrification |
| JFPR | Japan Fund for Poverty Reduction |
| LDCs | Least Developed Countries |
| MEP | Municipal Energy Planning |
| MIS | Micro Irrigation System |
| MTF | Multi-Tier Framework |
| NACC | Nepal Alliance for Clean Cookstoves |
| NACEUN | National Association of Community Electricity Users-Nepal |
| NEA | Nepal Electricity Authority |
| NEFEJ | Nepal Forum of Environmental Journalists |
| PAC | Practical Action Consulting |
| PCIA | Partnership for Clean Indoor Air |
| RECON | Renewable Energy Confederation of Nepal |
| RERA | Renewable Energy for Rural Areas |
| RETs | Renewable Energy Technologies |
| RSPN/Bhutan | Royal Society for Protection of Nature |
| RTKC | Regional Cookstoves Testing and Knowledge Centre |
| SDGs | Sustainable Development Goals |
| SE4ALL | Sustainable Energy for All |
| Sida | Swedish International Development Agency |
| UNDP | United Nations Development Programme |
| UNF | United Nations Foundation |
| WCRE | World Council of Renewable Energy |
| WEs | Women Entrepreneurs |

*"I am doing vegetable farming with the support of my husband. I used to sell vegetables of NPR 10 Lakh every year but after the outbreak of COVID-19, due to movement restrictions, we were unable to transport the vegetables to the market. Vegetables started spoiling in the field and for that reason; we were forced to sell it with very low price"*

*Sunita Danuwar, Pachkhal, Kavre*

# Awards and Recognitions

CRT/N's efforts have been recognized in international area through following rewards:

- CRT/N has been awarded with "The Adaptation at Scale Prize" on 23rd May 2019 in recognition for the promotion of innovative and unique Hydraulic Ram Pump technology.
- Hydraulic Ram Pump Project was awarded with "Protsahan (Encouragement) Prize by UKaid DFID supported Adaption at Scale Prize, Ideas to Impact-Rewarding Innovative Climate Change Adaption in Nepal, 2016
- IWM Programme was selected as final nominee for Energy Globe Award 2010
- The Ashden Awards for Sustainable Energy 2007 to IWM Programme (Ashden Trust for Sustainable Energy, UK)
- Recognition for Best Practice from Wuppertal Institute for Climate, Environment and Energy (WISION) in 2004, Germany on "Women in Energy and Water Management Project" supported by UNEP/ICIMOD.
- Consolation prize on the Ashden Awards for Sustainable Energy 2002 to IWM Project (Ashden Trust for Sustainable Energy, UK)
- Green Energy Letter of National Felicitation 2001 to IWM Project (Green Energy Mission, Nepal)
- IWM Project registered as Projects around the World at Expo 2000 Hanover, Germany.


## Centre for Rural Technology, Nepal (CRT/N)

**Bhanimandal, Lalitpur, GPO Box: 3628, Kathmandu**

**Phone: 5547627/ 5530071 I Email:info@crtnepal.org I Website: www.crtnepal.org**

**Blog: http://advocacy-wee-nepal.blogspot.com/ Facebook: www.facebook.com/crtnepalorg**